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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,316	07/25/2003	Timothy Neill	200208568-1	1916

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FORT COLLINS, CO 80527-2400

EXAMINER

TRAN, CHUC

ART UNIT	PAPER NUMBER
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2821

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/627,316

Applicant(s)

NEILL ET AL.

Examiner

Chuc D. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19,27-29,31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19,27-29,31 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-19, 27-29 and 30-32 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "electromagnetic shield disclosed around the antenna" in claims 1, 12, 27; the "conducting coating" in claim 10; and the "plastic foam" in claim 31 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "48, 54" and "64" have both been used to designate "metal plate" in Fig. 5 and 8. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear to understand how the function "method of tuning an antenna to produce a maximum output at a defined load" as recited claim 27 works with Specification without redefined. Clarify is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-19, 27-29 and 31-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones et al (USP. 6,531,985).

Regarding claim 1, Jones disclose a radio module for an electrical device in Fig. 2-4, comprising:

- a radio transceiver (30) (Fig. 3), an antenna (20) electrically coupled to the radio transceiver (30) (Fig. 3); and an electromagnetic shield (13) disposed around the antenna to isolate the antenna from loading effects of components of the electrical device that are external to the radio module (Col. 7, Line 65) (Fig. 3).

Regarding claim 2, Jones disclose that the radio module is adapted to be secured to a side of the electrical device (Fig. 3).

Regarding claim 3, Jones disclose that the antenna (112) is disposed on a printed circuit board (Col. 11, Line 2).

Regarding claim 5, Jones disclose that the shield is disposed relative to the transceiver to isolate the transceiver from electromagnetic interference from electrical components within the electrical device (Fig. 1 and 3).

Regarding claim 6, Jones disclose that a cover (13) disposed over the antenna and adapted to extend through an opening in the side of the electrical device, the cover comprising a material that is generally transparent to radio signals (Fig. 1-3).

Regarding claim 7, Jones disclose that a housing (13) disposed around the antenna (20), the housing having a portion generally transparent to radio signals from the antenna (Fig. 1 and 2).

Regarding claim 8, Jones disclose that the housing (13) is disposed around the transceiver (Fig. 1).

Regarding claim 9, Jones disclose that the housing comprises a conductive metal (Fig. 1).

Regarding claim 10, Jones disclose that the housing comprises a polymeric material having a conductive coating (Fig. 1).

Regarding claim 11, Jones disclose that the housing comprises a periodic band-gap material (Fig. 1 and 2).

Regarding claim 12, Jones disclose a radio module in Fig. 1-4, comprising:

- a printed circuit board (68); an antenna (20) disposed on the printed circuit board (Col. 11, Line 2); and an electromagnetic shield (13) extending from the printed circuit board around the antenna to isolate the antenna from loading effects of components of the electronic device that are external to the radio module (Col. 7, Line 65).

Regarding claim 13, Jones disclose that a radio transceiver (30) disposed on the printed circuit board and electrically coupled to the antenna (Fig. 1 and 4).

Regarding claim 14, Jones disclose that the radio module is adapted to be coupled to an enclosure (Fig. 1), and wherein the electromagnetic shield is adapted to extend from the printed circuit board to the enclosure (Fig. 1 and 3).

Regarding claim 15, Jones disclose that the shield (13) comprises a portion generally transparent to radio signals produced by the radio module, the portion being disposed in facing relationship with the antenna (Fig. 1 and 2).

Regarding claim 16, Jones disclose that the antenna (20) is disposed within the enclosure (Fig. 2).

Regarding claim 17, Jones disclose that a cover (13) disposed over the antenna (20), the cover being generally transparent to radio signals at the operating frequency of the radio module (Fig. 1 and 2).

Regarding claim 27, Jones disclose a method of manufacturing a radio module for use within an electrical device in Fig. 1-4, comprising:

- tuning an antenna to produce a maximum output at a defined load (Col. 1, Line 58); and disposing a shield (13) around the antenna to establish the defined load on the antenna (Fig. 1 and 2) and to isolate the antenna from electrical noise generated by electrical components within the electrical device but external to the radio module (Col. 7, Line 65).

Regarding claim 28, Jones disclose that an antenna housing (13) around a perimeter of the antenna (Fig. 2).

Regarding claim 31, Jones disclose that fabricating the shield with a conductively-coated plastic foam (Col. 11, Line 63).

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Regarding claim 32, Jones disclose that fabricating the shield with an open side to enable radio signals to be transmitted to and received by the antenna (Fig. 1 and 2).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4, 18-19 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones.

Regarding claims 4, 18-19 and 29, Jones disclose a radio module for an electrical device as set forth in the claims but does not goes to details of a metal plate coupled, disposed on the side of the printed circuit board opposite the antenna. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jones radio module by providing metal plate coupled, disposed on the side of the printed circuit board opposite the antenna as a metal conductive plate ground plane in order to provide the maximum signal strength See (Col. 14, Line 9-23).

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC
January 11, 2007



THO PHAN
PRIMARY EXAMINER